

REMARKS

The Invention:

The invention provides a bandsaw blade having un-set teeth, each tooth having a cutting extension. The cutting extension extends beyond the height of the tooth body. An individual cutting extension has a width less than the width of the tooth body, but the total width of the cutting extensions in a group of teeth is the same as, or greater than, the width of the teeth. The cutting extensions are positioned on the teeth in a group so that outer edges of the one cutting extension are generally aligned with the outer edge of a cutting extension on another tooth or aligned with the outer edge of the tooth. Thus, the cutting extensions are not aligned. As used herein, "aligned" means aligned as viewed along the longitudinal axis of the bandsaw blade.

Preferably, the cutting extensions within a group are each the same width, *e.g.*, one-third the width of the tooth. The cutting extensions within a group of teeth are positioned so that each tooth is located over a different portion of each tooth in the group. Thus, in a three-tooth group, each extension is one-third the width of the tooth. One extension is located over the left most third of one tooth, a second extension is located over the center third of another tooth, and a third extension is located over the right third of the remaining tooth. Generally, if there are "n" teeth in a group, each tooth has an extension wherein the extension has a width that is $1/n^{\text{th}}$ the width of the tooth.

Alternatively, a single tooth may have more than one extension so long as the total width of the sum of the widths of the extensions within a set group of teeth is generally equal to or greater than the width of the tooth body. For example, in a two-tooth group, the first tooth may have a centrally located extension that is one-half the width of the tooth body. The second tooth in the group has two extensions, each being about one-fourth the width of the tooth body, located adjacent to the outer edges of the tooth. Thus, the total width of the extensions, $1/2 + 1/4 + 1/4$, is about the same as the width of the tooth and the extensions are not aligned with each other. As such, in either embodiment, the cutting load on each tooth is about the same.

Status of the Claims

Claims 1-5, 8, 9, 12, and 15-19 remain pending in this application. Claims 6, 7, 10, 11, 13, and 14 are the subject of a restriction requirement with traverse.

Claims 2-5, 8, 9, 12, and 15-19 stand rejected under 35 U.S.C. § 112, second paragraph.

Claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by *Kullmann et al.*, U.S. Patent No. 4,640,172.

Claims 2 and 19 are further subject to objections. Claims 2 and 19 have been amended to address the objections.

The drawings are also objected to as failing to show every feature of the invention recited in the claims.

The specification is also objected to because of an informality. The informality has been amended.

Objection to Drawings

The drawings are also objected to as failing to show every feature of the invention recited in the claims. Applicant notes that Figures 5A, 5B, and 5C show, respectively, a group of three teeth, a group of four teeth, and a group of five teeth. As such, Applicant has shown groups of teeth wherein “one or more groups have a different number of teeth than other said groups.” As such, no new drawing is required.

Claims 2-5, 8, 9, 12, and 15-19; Rejected Under 35 U.S.C. § 112, Second Paragraph.

Claims 2-5, 8, 9, 12, and 15-19 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to point out and distinctly claim the subject matter which the Applicant regards as the invention.

As set forth on paragraph 9 of the June 23, 2003 Office Action, the Examiner states that the use of the phrase “each tooth in group” in line 3 is unclear in view of the use of the word “groups” in line 2. As set forth in MPEP 2173.02, when “reviewing a claim for compliance with 35 U.S.C. § 112, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function

required by 35 U.S.C. § 112, second paragraph, by providing clear warning to others as to what constitutes infringement of the patent.” *See, e.g., Solomon v. Kimberly-Clark Corp.*, 216 F.3d 1372, 1379, 55 USPQ2d 1279, 1283 (Fed. Cir. 2000). Here the claim, in pertinent part, reads:

said teeth are disposed on said bandsaw body in groups;
each tooth in a group having a cutting extension

In the first line, the plural word “groups” indicates that there is more than one group. Thus, in line 2, the noun “group” is modified to be a plural noun by the addition of the letter “s,” thereby indicating that there is more than one group of teeth. In line three, the singular article “a” is used to indicate that, out of the plurality of groups of teeth identified in line two, the present clause is restricted to a single group of teeth out of the plurality of groups of teeth. Thus, it is submitted that, when the claim is read as a whole, one skilled in the art will understand that line two identifies that the teeth are disposed on said bandsaw body in groups – meaning that there are more than one group of teeth – and that line three identifies that within a single group of teeth among the groups of teeth, each tooth has a cutting extension.

As set forth on paragraph 10 of the June 23, 2003 Office Action, the Examiner states that the use of the phrase “a cutting extension” is unclear in view of the recitation of the term “cutting extension” in claim 1. As noted above, MPEP 2173.02, states that “reviewing a claim for compliance with 35 U.S.C. § 112, second paragraph, the examiner must consider the claim as a whole ...” Initially, Applicant notes that claim 1 reads that “**some** of said teeth [have] a cutting extension...” (emphasis added). Claim 2, on the other hand, is not merely restating that each tooth has a cutting extension, but noting that the teeth are divided in groups and that each tooth in the group, as opposed to “some” teeth, have the cutting extension. It is further noted that the three-word phrase “a cutting extension” is, in fact, a part of the larger phrase “having a cutting extension which does not have a portion of the cutting extension substantially aligned with another cutting extension in the group.” It is submitted that one of ordinary skill in the art will understand this claim to mean that the teeth are disposed in groups of teeth, wherein each tooth of a group has a cutting extension, and within each of those groups of teeth having a cutting extension, the cutting extensions

do not have a portion of the cutting extension substantially aligned with another cutting extension in the group.

As set forth on paragraph 11 of the June 23, 2003 Office Action, the Examiner states that the phrases “the sum” and “the widths of said cutting extensions” lack an antecedent basis. Claim 1 has been amended to provide an antecedent basis for the phrase “the widths of said cutting extensions.” The word “sum” is defined as, “numbers to be added.” See, *Merriam-Webster Online Dictionary* at <http://www.m-w.com/cgi-bin/dictionary>. (Attached as Exhibit A). Thus, the “sum of the widths” does not refer to an element of the invention that can be identified by an antecedent, but instead refers to total width of the extensions if one were to add up the widths of all the extensions. Additionally, it is submitted that one of ordinary skill in the art will understand the phrase “sum of the widths” as used in claim 2.

As set forth on paragraph 12 of the June 23, 2003 Office Action, the Examiner states that the phrase “the outer side of the tooth body” as used in claim 3 lacks an antecedent basis. Claim 1 has been amended to provide the antecedent basis. Additionally, claim 3 has been amended to clarify that the outer sides of an extension on one tooth in a group are generally aligned with either the outer side of the tooth or with an outer side of an extension on another tooth.

As set forth on paragraph 13 of the June 23, 2003 Office Action, the Examiner states that the phrase “the same width” as used in claim 4 lacks an antecedent basis. Claim 1 has been amended to provide the antecedent basis.

As set forth on paragraph 14 of the June 23, 2003 Office Action, the Examiner states that the phrase “a cutting extension” as used in claim 5, line 3, is unclear in view of the language of claim 1. Again, it is noted that the claims must be read as a whole and that claim 1 recites that “some” teeth have a cutting extension. Claim 5 further limits claim 1 by reciting that some of the teeth are “cutting teeth” and that each cutting tooth has an extension. It is submitted that one of ordinary skill in the art will understand that claim 1 recites that only some teeth on the bandsaw body have a cutting extension and that claim 5 recites that among the teeth on the bandsaw body there are groups of cutting teeth wherein each cutting tooth within that group has a cutting extension.

As set forth on paragraph 15 of the June 23, 2003 Office Action, the Examiner states that the phrase “cutting extension has a width” as used in claim 5, line 4, is unclear. Again, it is noted that the claims must be read as a whole. In this instance, claim 5 does not merely recite the five-word phrase “cutting extension having a width.” Rather, this phrase is a part of the larger phrase, “cutting extension having a width that is about equal to the width of the tooth body divided by the number of cutting teeth in the group.” As such, this claim is defining the width of the cutting extension as a function of the number of teeth in a group as well as the width of the tooth body. It is submitted that one of ordinary skill in the art will understand that the phrase “cutting extension having a width” does not redefine or give an alternate meaning for the “width of the tooth.”

As set forth on paragraph 16 of the June 23, 2003 Office Action, the Examiner states that the phrase “the number” lacks an antecedent basis. Line two of claim 5 recites a “plurality” of cutting teeth. A “plurality” is defined as “the state of being plural.” See, *Merriam-Webster Online Dictionary* at <http://www.m-w.com/cgi-bin/dictionary>. (Attached as Exhibit B). “Plural” is defined as “consisting of ... more than one.” See, *Merriam-Webster Online Dictionary* at <http://www.m-w.com/cgi-bin/dictionary>. (Attached as Exhibit C). Thus, “the number” does not refer to a physical element within the claim that may be given an antecedent basis, but instead is part of the descriptive phrase “the number of cutting teeth in the group.” Wherein the “group” has been defined as having a “plurality of cutting teeth.” It is submitted that one of ordinary skill in the art will understand the phrase “the number of cutting teeth in the group” as used in claim 5.

As set forth on paragraph 17 of the June 23, 2003 Office Action, the Examiner states that the phrase “a cutting extension” as used in claim 8, line 4, is unclear in view of the language of claim 1. Again, it is noted that the claims must be read as a whole and that claim 1 recites that “some” teeth have a cutting extension. Claim 8 further limits claim 1 by reciting that four of the teeth are “cutting teeth” and that each cutting tooth has an extension. It is submitted that one of ordinary skill in the art will understand that claim 1 recites that only some teeth on the bandsaw body have a cutting extension and that claim 8 recites that among the teeth on the bandsaw body there are groups of cutting teeth wherein each cutting tooth has a cutting extension.

As set forth on paragraph 18 of the June 23, 2003 Office Action, the Examiner states that the phrase “cutting extension has a width” as used in claim 8, line 4, is unclear. Again, it is noted that the claims must be read as a whole. In this instance, claim 8 does not merely recite the five-word phrase “cutting extension having a width.” Rather, this phrase is a part of the larger phrase, “cutting extension having a width that is about one fourth the width of each said tooth body.” As such, this claim is defining the width of the cutting extension as a function of the width of the tooth body. It is submitted that one of ordinary skill in the art will understand that this phrase is read as a whole.

As set forth on paragraph 19 of the June 23, 2003 Office Action, the Examiner has requested that line 11 of claim 8 be amended for clarity. Claim 8 has been amended.

As set forth on paragraph 20 of the June 23, 2003 Office Action, the Examiner states that the phrases “the sum” and “the widths of said cutting extensions” as used in claim 12 lack an antecedent basis. Claim 1 has been amended to provide an antecedent basis for the phrase “the widths of said cutting extensions.” The word “sum” is defined as, “numbers to be added.” See, *Merriam-Webster Online Dictionary* at <http://www.m-w.com/cgi-bin/dictionary>. (Attached as Exhibit A). Thus, the “sum of the widths” does not refer to an element of the invention that can be identified by an antecedent, but instead refers to total width of the extensions if one were to add up the widths of all the extensions. It is submitted that one of ordinary skill in the art will understand the phrase “sum of the widths” as used in claim 12.

As set forth on paragraph 21 of the June 23, 2003 Office Action, the Examiner states that it is unclear how different groups may have different numbers of teeth and that width and locations between the groups would not correspond. With regard to the second statement, the Examiner is correct and that is, in fact, the reason to have groups of teeth having different numbers. As set forth in the specification, there may be a group of three cutting teeth, wherein each extension extends over one-third of the tooth body width. The group of three may be followed by a group of four cutting teeth, wherein each extension extends over one-fourth of the tooth body width. Thus, the bandsaw would have a combination of the groups shown in Figures 4A, 4B, 5A,

5B, 6A, and 6B. It is submitted that one of ordinary skill in the art will understand that the number of cutting teeth may vary between the groups of cutting teeth.

As set forth on paragraph 22 of the June 23, 2003 Office Action, the Examiner states that the phrases “the sum” and “the widths of said cutting extensions” as used in claim 18 lack an antecedent basis. Claim 1 has been amended to provide an antecedent basis for the phrase “the widths of said cutting extensions.” The word “sum” is defined as, “numbers to be added.” See, *Merriam-Webster Online Dictionary* at <http://www.m-w.com/cgi-bin/dictionary>. (Attached as Exhibit A). Thus, the “sum of the widths” does not refer to an element of the invention that can be identified by an antecedent, but instead refers to total width of the extensions if one were to add up the widths of all the extensions. It is submitted that one of ordinary skill in the art will understand the phrase “sum of the widths” as used in claim 18.

Claim 1; Rejected Under 35 U.S.C. § 102(b)

Claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by *Kullmann et al.*, U.S. Patent No. 4,640,172. *Kullmann et al.* discloses a bandsaw having unset teeth wherein the teeth do not have a uniform height. As set forth in the specification of the present application, a “tooth” of a bandsaw typically includes the portion of the bandsaw body that extends upwardly from the bandsaw body as well as a carbide tip. That is, as defined in this application, the “tooth” includes the portion of the band saw **and** the carbide tip.

The *Kullmann et al.* reference identifies the carbide tips as “cutting material plate[s] 6, 6’”. See Col. 5, line 61. Each plate 6, 6’ has a cutting surface 8, 8’. Using the definition of “tooth” as set forth in this application, the *Kullmann et al.* “tooth” includes both the plate and the tip, that is elements 6 and 8, or 6’ and 8’. As shown in Figure 1, *Kullmann et al.* discloses teeth having one of two different shapes. First, a tooth may have a cutting surface that is angled with a medial peak, as on the cutting edges identified by reference number 8’. Second, a tooth may have a cutting surface that is raised at the outer edge, as on the cutting edges identified by reference number 8. Because each of these teeth have angled upper surfaces, it cannot properly be said that the teeth have “a uniform height.”

As stated in MPEP §2131:

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.... The identical invention must be shown in as complete detail as is contained in the ... claim.

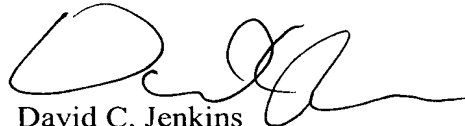
Id. (citing *Verdigaal Brothers v. Union Oil Company of California*, 814 F.2d 628, 631 (Fed. Cir. 1987) and *Richardson v. Suzuki Motor Company*, 868 F.2d 1226, 1236, (Fed. Cir. 1989)). It is respectfully submitted that upon reading the *Kullmann et al.* disclosure, one skilled in the art would not consider a “tooth having ... a uniform height;” as recited in claim 1.

Accordingly, Applicant requests that the Examiner withdraw the rejection under 35 U.S.C. §102(b) set forth in the June 23, 2003 Office Action.

CONCLUSION

Based on the amendments and remarks set forth above, Applicant submits that the rejection of claims 2-5, 8, 9, 12, and 15-19 under 35 U.S.C. §112, second paragraph, should be withdrawn. Applicant further submits that claim 1 is not anticipated by *Kullmann et al.*. Applicant respectfully submits that the application is now in proper form for issuance of a Notice of Allowance and such action is requested at an early date.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'D. C. Jenkins', with a long horizontal flourish extending to the right.

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